

Biochemistry Colloquium

Chem 688

Primary Instructor: Thomas Kuhn, 474-5752, tbkuhn@alaska.edu
Department of Chemistry and Biochemistry
Reichardt Building Room 184

Co-Instructor: Sarah Rice, sarice@alaska.edu
Murie Building, Room 223

Meeting Time: Fridays, 11:45 am to 12:45 pm (bring lunch)
Reichardt Building, Rm 300 (Runcorn)

Office Hours: please contact instructor via email or phone

Text: reading material will be distributed on blackboard

Course Description:

An American philosopher, Wilfred Sellars, simply explained philosophy as “how things in the broadest possible sense of the term hang together in the broadest possible sense of the term.” Philosophy achieves this by asking questions. Since science at its heart is about asking questions understanding how science hangs together, the history of how we form scientific questions, what makes them valuable, what logically and reasonably supports them, and why they count as science is essential to, and at the heart of, philosophy of science.

In this colloquium, we will focus initially on a brief overview of the most significant philosophical developments leading to what we consider our current structure of science and the scientific method. We will cover key individuals and movements of thought starting from Aristotle and ranging up through Descartes, Hume, Bacon, Popper and Kuhn. There will be short overviews constructed for each of these thinkers by students, followed by class discussion about a general topic in relation to the thinker, which is of significance to the philosophy of science. This historical look at the development of the philosophy of science will take up the first half of the semester. The second half of the semester will be utilized to have each participant applying the learned philosophical viewpoint(s) to their personal thesis research.

Course Goals:

Questions this class should ask with different philosophers and topics:

- 1.) How does the evidence justify a scientific theory?
- 2.) How are these thinkers contributing to the scientific method?
- 3.) What is the philosopher trying to confirm?
- 4.) When we are doing science, what rules are we following?
- 5.) How is science different from other ways we gain knowledge?
- 6.) Why is science important? Why do we do it? Why is it justifiable? Why do we believe in it?

Learning Outcomes: Fall 2015

- Exposure to the basic historical development of philosophy of science
- Competency with terminology such as Inductive and Deductive Logic, Empiricism, Epistemology, Metaphysics, Theories, Laws and Facts
- Practical application of philosophy of science concepts to thesis research

Instructional Methods:

The course is primarily composed of group discussions (approx. 85%), and individual/group oral presentations (approx 15%).

Grading:

Students will be evaluated on the basis of their *participation*. Grades are pass or fail.

Course Policies:

Attendance: Graduate student attendance is expected. Undergraduate student attendance is highly encouraged. Active student participation is expected and will account largely for the pass/fail grade.

Presentations: Students will receive adequate preparation time for all assignments. Content and organization of topics are the primary concern, however presentation and discussion are also subject to scoring procedure.

Ethical Considerations:

The Chemistry Department's policy of cheating is as follows: "*any student caught cheating will be assigned a course grade of F. The student's academic advisor will be notified of this failing grade and the student will not be allowed to drop the course*".

Plagiarism Policy:

Plagiarism is defined as the use of "other" intellectual property without proper reference to the original author. Intellectual property includes all electronic, spoken or print media *thus any information taken of the web is included under this statement*. Students are expected to cite all sources used in oral and written presentations. Cases of plagiarism will be taken seriously with a grade 0 for the particular assignment. Severe cases may be referred to the Department Chair or Dean or class failing considered.

Services –Support, Disabilities:

Support services will be provided by the University of Alaska Library system, online resources and the instructor. Additional services are available through Student Support Services (<http://www.uaf.edu/sssp/>) at UAF. We will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide accommodations for students with disabilities.